

## WAFER PROBE STATION HAVING SKIRTING COMPONENT

## ABSTRACT

5 A probe station includes a fully guarded chuck  
assembly and connector mechanism for increasing sensi-  
tivity to low-level currents while reducing settling  
times. The chuck assembly includes a wafer-supporting  
first chuck element surrounded by a second chuck element  
10 having a lower component, skirting component and upper  
component each with a surface portion extending opposite  
the first element for guarding thereof. The connector  
mechanism is so connected to the second chuck element as  
to enable, during low-level current measurements, the  
15 potential on each component to follow that on the first  
chuck element as measured relative to an outer shielding  
enclosure surrounding each element. Leakage current from  
the first chuck element is thus reduced to virtually  
zero, hence enabling increased current sensitivity, and  
20 the reduced capacitance thus provided by the second chuck  
element decreases charging periods, hence reducing  
settling times. With similar operation and effect, where  
any signal line element of the connector mechanism is  
arranged exterior of its corresponding guard line  
25 element, such as adjacent the chuck assembly or on the  
probe-holding assembly, a guard enclosure is provided to  
surround and fully guard such signal line element in  
interposed relationship between that element and the  
outer shielding enclosure.